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RECORDS OF ONE HUNDRED AND FIVE CASES OF OPERATION FOR CATARACT.*

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THESE are records of my operations since I gave up the old flap, and employed Prof. Graefe's method of extracting cataract. My reasons for so doing may be found in this JOURNAL for Nov. 2, 1871. I do not here propose to discuss the relative value of the various methods of removing cataracts by extraction. My records, however, certainly show the adaptability of Graefe's method to the different forms of cataract, both in children and adults. The list contains seventy-two Graefe operations for cataract in adults, not congenital; one linear extraction of soft cataract in an adult; twenty-one cases of congenital cataract in children or adults operated on in various ways, and eight cases in which traumatic cataracts were removed by one method or another. Two flap extractions are also recorded here, being those done on the first eye of two patients, where I changed to Graefe's operation for the second.

I would first here quote from my previous article just referred to, in which I said: "The profession at large will not, nor can they be expected to, take any interest in such an article as this, until relative or friend is blind from cataract, and seeks by operation the restoration of sight. Then the method chosen and its prospects of success become of vital interest. But a very great and perhaps somewhat extraordinary ignorance prevails, not only among the laity, but also among professional men, as to cataract itself. Where any knowledge exists, it seems to be that cataract is not a disease, or due to a disease, but simply an opacity of the crystalline lens, and if this can be successfully removed from the eye, the patient must needs see as well with that as with the other eye when not affected. Now, unfortunately, should the ophthalmic surgeon limit his operation to pure senile cataract, he would not relieve a large number of cases that can be helped in some degree, although his record of *success* would be materially increased. Congenital, posterior polar or cataract with disease of the internal ocular membranes, and traumatic, embrace a pretty large number which we are, so to speak, forced to operate on, yet which we know will reduce the fraction in our column of vision when the cases are tabulated. For instance, a child may have congenital cataract in

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both eyes, not enough in one eye to prevent reading, but sufficient in the other to allow only the discernment of large objects or the recognition of light from darkness. If, now, an operation does not give to this eye as good vision as the other, the operator is naturally blamed, although he may have cleared away all obstruction to the entrance of the rays of light to the retina, and his operative interference not have excited damaging inflammation. The retina or recipient surface, and the optic nerve or conducting apparatus are at fault, i. e. they are not developed normally.

"Or, again, a physician recognizes cataract in one of his patients, and sends him to the specialist for operation. The ophthalmoscope shows the latter that the cataract is due to, or accompanied by, disease of the choroid, which of itself would reduce the power of vision excessively, and, moreover, that the choroidal trouble may in great measure count against operative interference. Should, now, this latter be employed, and all obstruction to the entrance of light be successfully removed, yet the surgeon gets blamed for not performing a miracle, namely, making the blind retina perceive. I will not dwell upon the fact of how utterly the specialist is in the hands of the patient he has operated on or their surroundings, or how they may readily spoil his best work, by neglect or total disregard of the directions and precautions given. These are matters the profession, at least, can well understand, and we are sure of their sympathy in them. Please let it be remembered that an eye with cataract is a diseased one, and that the operation causes a dangerous wound."

The analysis of my operations I present, not for ophthalmic surgeons to draw arguments from in favor of one or the other operation for cataract, but in such a simple form that the profession may gather from it some better idea about cataract operations themselves, the time required for treatment, the complications liable to arise, the accidents that occur, both at the time and afterwards. I think, too, it will help to excuse us specialists for being, as no doubt we often are thought to be, namely, *fussy* about our patients. It may also show why I, for one at least, have so frequently refused to operate on patients at a distance from Boston, when they must be left under their own physician's care afterwards. I prefer the patient within reach, where a visit may be made at any time, even if it is only to relieve my own anxiety. I well know how great an advantage it is to have old persons quiet in their own home, and amidst their own surroundings. My experience, however, has taught me that if you can get an old person once started from home, he will not generally be homesick till, if the case goes favorably, such time after the operation as it is safe to let him return. I find that when there was blindness from double cataract, an old person's homesickness is often half a desire to again see once familiar faces and scenes. Much naturally depends on the success of the surgeon in his hold over these *old children*.

About the operation itself: A patient's dread of it comes, of course, only from what he gathers from his surroundings, professional or otherwise. Now, in fact, there is rarely pain after cataract operations; most generally, absolutely nothing but the discomfort of a bandage. I have *always given ether*, and have *never seen cause to withhold it*, or evil effects traceable to it. Moreover, I have seen the very worst that can happen after operation, namely, general suppurative inflammation

of the globe, run its course *without pain*. With Graefe's operation, our wound heals quickly, and the patient can soon be up and dressed, an important point with old people. About all of the old paraphernalia of preparations and precautions have been brushed away as unnecessary, at least. We now best take patients just as they are, in average health and condition. Too much is made of the formidableness of a cataract operation. I have thought that the present success of ovariotomy was not a little increased by the once almost complete dread of it being broken down. For myself, I would rather extract a cataract for a patient who had never heard of the operation for it. I make it a rule to try to persuade physicians to be present when I operate on their patients, to disseminate, if possible, a true knowledge by observation of the operation itself. I think my brother ophthalmic surgeons will agree with me that the wear and tear on us is not the operation itself and anxiety during treatment, but the mental effort required to brush away the thousand and one fears, dreads, prejudices and whims with which patients' surroundings have enveloped them. Many and many an old person is now passing the last ten or twenty years of his life in the darkness, an extra care and burden to friends and relatives, simply because these very friends and relatives take it upon themselves to do the medical man's thinking for him. The family physician can best help to disabuse the patient and those interested in him, of the many wrong ideas now prevalent about the pain from cataract operation, the danger to life from ether, the absurdity that old people can't take it, and the many wrong impressions as to the time to be passed in bed, or shut up in a darkened room, &c. Nothing dispels all these from the physician's mind quicker or more thoroughly than to come and see how we do the operation, and how we take care of our patients afterwards.

An inquiry recently made in the Boston Medical and Surgical Journal induces me to add a few plain words here. Although cataract is very properly placed in our fee table among the capital operations, yet no one in this New England community need, from poverty, remain blind on account of it. In consequence of a prevalent opinion to the contrary, amongst the laity, and even in the profession, I would here explicitly state that the Surgical Staff at the Massachusetts Charitable Eye and Ear Infirmary receive no fee or emolument of any kind whatsoever from the State, city or patients. Since it was founded by Dr. Reynolds, senior, and my father, in 1827, its doors have been freely open to all charity cases. The house patients, when able, pay board at the present rate of five dollars per week. No patients are ever refused admittance because they cannot afford to pay their board, least of all those suffering from blindness due to cataract. There are, however, no private rooms for patients desiring to pay a fee for professional services, or wishing to have more care and attendance than the other patients. Such arrangements are customary in all hospitals, but they do not yet exist in the Infirmary; hence, those who desire, or who can afford, to pay for operations must be refused admittance. Such patients can, however, obtain at the hospital to which I am attached in South Boston, the Carney, the best rooms and trained nursing, such as cannot be obtained at any price in hotel or boarding house, and on the most reasonable terms. This hospital fully meets the cases of those who desire and have the ability to pay something, and who shrink

from being treated as charity patients. The Carney is the best situated hospital as regards light, air and opportunities for ventilation. Private patients need never know they are under a hospital roof, and they soon learn from kindness and attention received that a sister of charity is not a nun. Professional services at the Carney Hospital are not confined to the staff. Any physician can have private patients there, and I do not think he or they will regret having availed themselves of the opportunity. It will therefore be seen that there really is no excuse in this New England community for those who, from carelessness or lack of means, allow dependants, friends or relatives to live on the latter years of their lives deprived of the blessing of sight, or let children grow up in darkness from congenital cataract.

Much ignorance prevails as to the time when a cataract should be extracted. It is almost the universal rule among ophthalmic surgeons not to operate on both eyes at the same time. When one eye has cataract, this should be extracted as soon as it is ready. Waiting till the other eye is affected is a bad plan, as not only is the best condition of the lens to be removed thus lost, but a patient having one good eye is not so frightened in reference to an operation on the other, and should it fail from any special cause, the surgeon has learned how to deal with the second eye and with his patient. Patients with double cataract will rarely allow the second to be removed if the first was not a success. Graefe's operation can be employed any time during the year in hot or cold weather. The patient needs no preparation but an empty stomach to take ether on.

As to congenital cataract in children: This is very often mistaken for simple near-sightedness, and the child allowed to grow up without the necessary operative interference. I have repeatedly called physicians' attention to this in the medical journals. A congenital cataract is very apt to so change as to render its removal more and more difficult with advancing years, and greatly diminish chances of success in operating, and resulting vision. Complete congenital cataract cannot be operated on too early, in order to let in the light and favor the growth and development of the eye. Improved instruments allow us now-a-days to attack and remove these forms of cataract with much greater certainty and success.

In a previous paper, I remarked that I would rather have a report as to how perfectly the pupil was cleared of cataract and its debris, than the fraction expressing the patient's vision. We always know of our unsuccessful cases before they leave our care. All others, in spite of our greatest care, are apt to go away without our having opportunity to test their power of vision, or even select their spectacles. Many patients in this list, whose vision is unrecorded, are naturally constantly appearing to have their glasses selected. Two came whilst I was writing this article. All cases which were successful are so stated in the column of recorded vision. To have vision equal to one-tenth, i. e. to read our test-types for one hundred feet, at ten feet, is considered a success. Much less vision, however, than one-tenth is a great blessing to an old person, or even a young one. Whilst I agree most fully with the feeling that every one of our cases should be most carefully tabled and vision recorded, yet I agree with Prof. Zehender, who, in reviewing the report of the 1873 meeting of the American Ophthalmological Society, remarks, finally: "The concluding that this or

that method of operating is better than any other, because it has so much or so much per cent of success, we cannot regard as perfectly fair and correct, however heretical this view of ours may seem."

Whilst I always strive to secure, at any sacrifice of time and trouble on my part, a record of resulting vision when the patient leaves my care, or subsequently, just how small the fraction is which expresses the sight gained I do not so much interest myself in. Till this article was written, I never had made up a table of my results. On going over my original notes, from which these reports are compiled, I find that of these one hundred and five cases, eight failed wholly; not from the operation, but subsequent inflammation, &c., as the "Remarks" and "Vision" column will show. One of these was from purulent ophthalmia, transferred by the fingers, the wound having healed well. Some of the other seven may hereafter be benefitted by a secondary operation, but I mark them now as lost. It is, perhaps, a little curious, but I have done but one secondary operation, and that was after one of the two flaps here recorded. There are fifteen cases where distant vision was not recorded. Some of these I know from their reading Jäger's test-type, No. 1, will be hereafter recorded amongst my most successful cases, and all will be classed in or above the one-tenth vision considered successful. Quite a number, I operated on against my will.

Many of these cases have already, through the Reports of the Infirmary, passed into the lists of cataract operations gradually collecting in the various parts of this country. As showing simply how resulting vision varies, I tabulate my cases of extraction not congenital or traumatic where I have a positive record of *distant* vision, that is, the test letters at a distance of twenty feet.

In explanation of the column of resulting vision, the letter J means Jäger's test-types, the finest being No. 1. The letters Sn. mean Snellen's types, the finest being $1\frac{1}{2}$. In the column headed functional examination, *normal* means that the eye-ball is not too soft, the pupil dilates sufficiently well, there is no apparent present disease, and the patient can say, in a darkened room, where a candle is as it is moved about, whilst the eye is still and its light thus falls on different portions of the retina.

V = 1 cases 2.	V = $\frac{1}{4}$ " 6.	V = $\frac{1}{10}$ " 7.
V = $\frac{3}{4}$ " 5.	V = $\frac{1}{5}$ " 5.	V = $\frac{1}{20}$ " 2.
V = $\frac{1}{2}$ " 10.	V = $\frac{1}{6}$ " 1.	V = $\frac{1}{100}$ " 2.
V = $\frac{1}{3}$ " 3.	V = $\frac{1}{8}$ " 2.	

The type, in which this line is set, is equal in size to number two (No. 2), Jager. Vision one is to be able to read the above letters B U C at twenty feet. Vision one-half, F K at twenty feet. Vision one-tenth, considered a success, to read C at twenty feet.

REPORTS OF ONE HUNDRED AND FIVE CASES OF OPERATION FOR CATARACT.

No.	Age.	Sex.	General Health.	Quality and Duration of Cataract.	Functional Examination.	Method of Operating. Incidents. Anæsthesia. Remarks. After-treatment.	Duration of Treatment.	Resulting Vision and date of Record.
1	70	M.	Good.	Senile. O. D.	Normal.	Flap extraction downwards, with iridectomy. Some vitreous lost, and nucleus removed with scoop. Considerable cortical remained. One year after, small iridectomy done on contracted iris and capsule torn with stop needle.	28 dys.	One year. Jäger 16 at 4″, and go about alone.
2	70	M.	Good.	Senile. O. S.	Normal.	Graefe downwards. Nucleus large and hard. Small amount of cortical left in the pupil. Patient wrote, "he never could see minute objects better than now."	18 dys.	One year. Jäger 1.
3	37	M.	Good.	O. S.	Normal.	Flap extraction upwards, with iridectomy. Cornea quite thin and iris not over strong.	26 dys.	Six months. V = 20-40. Jäger 7.
4	37	M.	Good.	O. D.	Normal.	Graefe upwards. Normal.	14 dys.	Fourteen days. V = 20-40. Improved to 20-20.
5	46	F.	Poor.	O. S.	Normal.	Flap extraction, with iridectomy. Some vitreous. Wound closed well. Fifth day, purulent discharge. Patient a drunkard, and having leucorrhœa. Removes bandage and elopes, notwithstanding tonics and stimulants were allowed.	30 dys.	Sees a hand. Thirty days.
6	61	F.	Fair.	Caused by chr. trouble. O. D.	Fair.	Graefe upwards. Lens removed with scoop. Some subsequent hæmorrhage.	22 dys.	22 days. Counts fingers at 5′. Fast clearing.
7	79	M.	Very poor.	Hard senile. O. S.	Normal.	Graefe upwards. Normal, except slow absorption of cortical.	22 dys.	Six months. Vision = 20-100. Jäger 6.
8	29	F.	Fair.	Soft. O. S. Four weeks.	Normal.	Graefe upwards, small cut. Patient was feeble during treatment. Vitreous found cloudy.	30 dys.	Noted only "now improving."
9	67	F.	Poor.	Senile, over-ripe. O. D.		Graefe upwards. Lens substance fluid. Irido-choroiditis tenth day. Eye lost.	36 dys.	Vision = 0.
10	80	M.	Good.	Senile, eight years. O. D.	Normal.	Graefe upwards. Patient restless and homesick. Left, with improving vision. Eye irritable.	30 dys.	30 dys. Counts fingers.
11	60	F.	Good.	Senile. O. D.	Normal.	Graefe upwards. Iris pushed back, and could not be grasped; yet, one month later, looked as if an iridectomy had been done.	20 dys.	Twenty days. Vision = 20-30.
12	75	F.	Fair.	Senile. O. S.	Normal.	Graefe upwards. Cortical not well cleared.	15 dys.	Fifteen days. Vision = 20-100. Jäger 9.
13	75	F.	Good.	Senile. O. D.	Normal.	Graefe upwards. Normal.	15 dys.	Forty-five days. V = Jäger 7. Can sew.
14	65	M.	Good.	Senile. O. D.	Normal.	Graefe upwards. Normal.	17 dys.	17 dys. V = 5-20. J. 17.
15	65	M.	Good.	Senile. O. S.	Normal.	Graefe upwards. Normal. Third day, bandage off and patient up and about.	7 dys.	Seven days. Vision = 5-20.

16	83	M.	Fair.	Senile. O. S.	Normal.	Graefe upwards. Iris receded. Some vitreous. Patient very restless; removed bandage. Wound not closed for long time. Iris in it. Good ant. chamber and a chance for future operation. Another surgeon met with similar result with the other eye.	47 dys.	Vision = 0.
17	60	M.	Very poor.	Senile. O. D.	Normal.	Graefe upwards. Normal. Patient came out of ether as usual. Third day, died in apoplexy. A drunkard, who was watched ten days to avoid liquor, which he, however, obtained. The cut healed perfectly.		
18	73	F.	Good.	Senile. O. D. 20 years.	Normal.	Graefe upwards. Large mahogany-colored lens removed. Some capsule left.	20 dys.	20 days. Counts fingers at 20 ft. J. 12.
19	69	M.	Fair.	Senile, both fol. post. polar.	Not very good.	Graefe upwards. Large lens removed. Pain; in twelve hours, traumatic choroiditis and iritis. Pus in anterior chamber in forty-eight hours. Gradually disappeared. Operation could not be well refused.!	25 dys.	Vision = 0.
20	27	F.	Good.	Soft. 2 years O. D.	Good.	Graefe upwards. Lens soft. No hard nucleus. Patient vomited ten hours.	17 dys.	Seven mos. V = 20-40. Cannot read. Sews.
21	76	F.	Fair.	Senile, both O. D.	Normal.	Graefe upwards. Pupil well cleared. Threatened iritis, sixth day.	18 dys.	Eighteen days. Vision = 1-8.
22	67	M.	Good.	Post. polar, but no signs of choroiditis now	Fair.	Graefe upwards. Some vitreous, and lens removed with scoop. Choroidal hæmorrhage and subsequent suppuration of globe. After operation, patient admits he was once nearly asphyxiated in a tank. A man with him became blind, and this patient's eye was never so good afterwards.	28 dys.	Vision = 0.
23	Same	pat'nt	as No. 21.	2 years. Soft. O. S.	Normal.	Graefe upward. Small cut, and pupil cleared by rubbing.	22 dys.	22 days. V = 20-50. Pt. cannot read. Sews.
24	80	F.	Good.	Senile. O. S.	Normal.	Graefe upwards.	21 dys.	21 days. V = 20-100. Snellen 6.
25	70	F.	Fair.	Senile. O. S.	Normal.	Graefe upwards. Iritis from exposure on removal to another room, and patient went home.	12 dys.	5 months. V = 1-8. Jager 18.
26	60	M.	Good.	Senile and post polar. O. S.	Fair.	Graefe upwards. Considerable blood in anterior chamber, so no cortical could be removed, except with the lens. Bandage badly kept on. Two and a half months later, under ether, a roll of iris removed from centre of pupil.	19 dys.	2 1-2 months. V = 20-40. Patient cannot read.
27	57	M.	Fair.	Senile. O. D.	Normal.	Graefe upwards. Wound healed well. One week, blood in anterior chamber. With atropine and leeches, all subsided. Patient will now improve in vision rapidly.	23 dys.	23 days. Sees small objects, like the cutting on a finger ring.
28	23	F.	Good.	Soft. O. D.	Normal.	Small Graefe upwards. Capsule removed with forceps, and pupil clear. No blood in anterior chamber. Next day, blood in anterior chamber, but eye quiet. Bandage hardly kept on at all.	20 dys.	Not recorded, as patient is to return for glasses. Will be good.
29	64	M.	Good.	Senile. O. S.	Normal.	Graefe upwards. Normal. Third night, patient struck his eye and had severe pain three hours. Thirty-six hours after, pain and redness. Wound looking as if it would slough. Atropine, &c. In ten days, quiet.	13 dys.	2 1-2 months. V = 10-100.

REPORTS OF ONE HUNDRED AND FIVE CASES OF OPERATION FOR CATARACT. (CONTINUED.)

No.	Age.	Sex.	General Health.	Quality and Duration of Cataract.	Functional Examination.	Method of Operating. Incidents. Anæsthesia. Remarks. After-treatment.	Duration of Treatment.	Resulting Vision and date of Record.
30	71	M.	Good.	O. D. 7 years. O. S. 1 year.	Normal.	Graefe upwards. Normal. Patient had used atropine in o. s. for five years.	21 dys.	21 days. V = 2-10. Reads Snellen 12.
31	70	F.	Good.	O. S. Sen. O. D. pos. pol. 19 yrs.	Normal.	Graefe upwards. Third to fourth day, patient struck her eye and forced open inner edge of wound, and iris adhered in it.	33 dys.	33 days. V = 20-100.
32	76	M.	Good.	O. D. Senile.	Normal.	Graefe upwards. I removed, a month previous, a stump from o. s., the result of old injury. This was irritating the other eye.	22 dys.	22 days. V = 20-50. Jager 1.
33	80	M.	Good.	Senile. O. D.	Normal.	Graefe upwards. Did well till fourth day; then, sudden irido-choroiditis, reducing vision, which was, on third day, equal to seeing finger ring without glass.	21 dys.	1 1-2 month. Sees fingers. Improving.
34	36	M.	Good.	Not recorded. O. D.	Normal.	Graefe upwards. Did very well till third week. Patient went out raw November day, and at once hæmorrhage in anterior chamber. Great pain. One month, blood gone. Patient says he saw well laterally till time of pain.	56 dys.	Vision = 0.
35	40	M.	Good.	Senile. O. S.	Normal.	Graefe upwards. Normal.	29 dys.	1 year. V = 20-30. Snellen 1 1-2.
36	65	M.	Good.	Senile. O. D. both.	Normal.	Graefe upwards. Normal.	27 dys.	27 days. V = 20-30. Snellen 1 1-2.
37	79	M.	Good.	Senile. O. D. both.	Normal.	Graefe upwards. Normal.	21 dys.	21 days. V = 10-100. Snellen 1 1-2.
38	68	M.	Good.	Senile. O. D.	Normal.	Graefe upwards. Iris cut with knife. It folded in, and was grasped with forceps. Wound healed a little slowly.	30 dys.	30 days. V = 10-40. Snellen 1 1-2.
39	80	M.	Good.	Senile. O. D. both.	Normal.	Graefe upwards. Cut was small.	22 dys.	22 days. V = 20-40. Snellen 3. 2 years, ditto.
40	62	M.	Good.	Senile. O. D. both. Doubtful.	Normal.	Graefe upwards.	22 dys.	22 days. V = 20-40.
41	43	F.	Good.	Hard blow on temple 2 yrs. ago. Soft?	Not good.	Graefe upwards. Some subsequent pain, but did well.	16 dys.	16 days. V = 20-40. Snellen 1 1-2.
42	71	M.	Fair.	Senile. O. D. Over-ripe 4 yrs	Normal.	Graefe upwards. One month, tag of iris in outer edge of wound.	18 dys.	18 days. V = 1-7 and Snellen 1 1-2.
43	64	F.	Fair.	Senile, some years.	Fair.	Graefe upwards. Lens came out in two pieces. Patient rather feeble. Before operation, posterior surface of lens quite white and rest of lens pretty clear.	20 dys.	V = 10-100.
44	62	F.	Fair.	Senile. O. S. both.	Normal.	Graefe upwards. Normal. Patient went home, and bought *concave* glasses. With convex guessed at, patient has vision to read with.	8 dys.	1 1-2 years. Reads and threads fine needle.

45	72	F.	Fair.	Senile. O. D. both.	Normal.	Graefe upwards. Did well till ninth day. Some iritis and acute granulations. Treated some two months.	20 dys.	2 months. V = 15-60. Snellen 4 1-2.
46	50	F.	Good.	Senile. O. S. both.	Normal.	Graefe upwards. Normal.	21 dys.	21 days. V = 20-20. Snellen 1 1-2.
47	60	M.	Good.	Senile. O. D. both.	Normal.	Graefe upwards. A little vitreous. Iris became involved in wound, causing slow healing.	32 dys.	32 days. V = 10-100. Snellen 3 1-2.
48	50	M.	Poor.	Senile. O. D. both.	Poor.	Graefe upwards. A very deep-set eye, rendering a perfect Graefe impossible. Patient thought to be crazy by his family. Nervous, irritable; removed bandage. Traumatic iritis, which yielded to treatment, and in one month vision was 10-100. He after this got granular lids and double iritis. The lymph in pupil organized, and the patient has not been since mentally fit for any further operation.	30 dys.	30 days. V = 10-100.
49	62	F.	Fair.	Senile. O. D. both.	Normal.	Graefe upwards. Normal.	19 dys.	19 days. V = 20-100. Snellen 2.
50	57	M.	Fair.	Senile. O. D. 2–3 years.	Normal.	Graefe upwards. Not a full Graefe cut.	21 dys.	21 days. V = 20-100. Snellen 2 1-2.
51	50	F.	Fair.	Senile. O. S, both. Operat'n twice refused.	Fair.	Graefe upwards. Cortical left, rather than risk vitreous. Normal till fourteenth day, when patient used very hot water on eye and had blood in anterior chamber. Absorbed in a few days.	31 dys.	31 days. V = 20-40. Snellen 1 1-2.
52	50	F.	Good.	Senile. O. D.	Normal.	Graefe upwards. Normal.	20 dys.	20 days. V = 20-30. Snellen 1 1-2.
53	59	M.	Fair.	Senile. Both O.S. was struck 2 years ago.	Normal.	Graefe upwards. Vitreous, as was expected, came, and lens removed with scoop. A little tag of iris remained in end of wound after healing.	28 dys.	28 days. V = 20-80. Snellen 4 1-2.
54	63	F.	Fair.	Same pt. as 49.	Normal.	Graefe upwards. Normal.	22 dys.	22 days. V = 20-40.
55	58	M.		Senile. O. S.	Normal.	Graefe upwards. A tag of iris fastened in end of wound whilst healing.	20 dys.	20 days. V = 20-80. Snellen 1 1-2.
56	49	M.	Fair.	Senile. O. D.	Normal.	Graefe upwards. Did well till fourth day. Then, against orders, bandage removed. Some pain, and blood in anterior chamber. Fifteenth day, violent pain, "as if eye struck with fist." Treatment relieved all.	26 dys.	26 days. V = 10-30. Patient cannot read.
57	63	F.	Fair.	Senile. O. D. 15 years.	Fair.	Graefe upwards. Lens substance like pus. This eye, after operation, showed the same alteration at the centre as the other does, operated on twenty-three years ago.	22 dys.	22 days. V = 10-100.
58	46	M.	Good.	O. D. 3 years. Soft.	Normal.	Graefe upwards. Lens substance harder than supposed; still no nucleus. There has been, probably, old choroiditis, or at least trouble with vitreous, as there were cobweb films in pupil not due to lens, and before operation patient had muscæ volitantes. The other eye, operated on sixteen days after, did the same or better. Both are clearing.	14 dys.	Not noted as different from other eye.
59	46	M.	Good.	O. S. 1 yr.	Normal.		18 dys.	18 days. V = 5-100.

REPORTS OF ONE HUNDRED AND FIVE CASES OF OPERATION FOR CATARACT. (CONTINUED.)

No.	Age.	Sex.	General Health.	Quality and Duration of Cataract.	Functional Examination.	Method of Operating. Incidents. Anæsthesia. Remarks. After-treatment.	Duration of Treatment.	Resulting Vision and date of Record.
60	71	M.	Fair.	Senile. O. S.	Normal.	Graefe upwards. Patient moving, and considerable blood; yet the operation passed off well. General inflammation came on in forty-eight hours, but no pain. Ran the usual course. Pus profuse. Though no contagion could be traced, a case of gonorrheal ophthalmia was in the adjacent room.	50 dys.	50 days. V = 0.
61	60	M.	Good.	Senile. O. D. 1½ year and post. polar.	Normal.	Graefe upwards. Normal. Bandage off third day.	17 dys.	17 days. V = 20-50. Snellen 1 1-2.
62	61	M.	Good.	Post. polar and senile. O. S.	Normal.	Graefe upwards. Normal.	14 dys.	14 days. V = 10-30. Snellen 1 1-2.
63	84	M.	Good.	Senile. O. D. 5 yrs. O. S. 2 years.	Normal.	Graefe upwards. Patient very restless. Fourth day, bandage off.	25 dys.	4 1-2 mos. V = 20-40. Snellen 1 1-2.
64	69	M.	Fair.	Senile, not perfect. O. D. 3 years.	Normal.	Graefe upwards. Cataract very sticky. Patient has been a hard drinker. Considerable cortical left, which was absorbed but slowly, taxing the eye. But quiet in two months.	30 dys.	5 months. V= 10-100. Jäger 8.
65	81	M.	Good.	Senile. Hard. 6 yrs. O. S.	Normal.	Graefe upwards. Cornea very small. Wound small and enlarged. Lens removed with difficulty. Fifth day, bandage off, and patient tells fingers. Cortical absorbing slowly.	23 dys.	23 days. Counts fingers. Goes about alone.
66	58	F.	Fair.	Hard. 6 yrs. O. D.	Normal.	Graefe upwards. Patient up third day, and did well, notwithstanding weakening diarrhœa.	14 dys.	14 days. V = 20-50. Snellen 2.
67	74	F.	Fair.	Senile. O. S.	Normal.	Graefe upwards. Cut small, but lens came easy. Did well till seventh or eighth day; then, slight irritation and patient homesick. Taken home. Vision is very good, but only could be hastily tested, as recorded.	18 dys.	18 days. J. 8-9.
68	52	M.	Good.	6 mos. O. D.	Normal.	Graefe upwards. Persistent iritis. Pain after operation for three hours; relieved by loosening bandage. Treated as out-patient.	30 dys..	Not yet taken.
69	80	M.	Good.	Senile. O. S. both.	Normal.	Graefe upwards. Lens nucleus removed with scoop after many efforts. Wound healed perfectly. Patient had senile delirium, tearing off bandage and rushing out doors. After operation, family said he had so acted before. He was a most inveterate smoker and chewer. The cortical was fluid and lens nucleus sank. No iritis followed.	30 dys.	Vision = 0.
70	70	M.	Good.	Senile. O. D. Not perfect.	Normal.	Graefe upwards. Patient sneezed violently and continuously under ether. No vitreous lost. Wound healed well. Pupil perfectly clear, and ophthalmoscope showed old choroiditis, a history of which and iritis was then got.	25 dys.	25 days. V = sees fingers.

71	72	M.	Good.	Senile. O. D.	Normal.	Graefe upwards. Normal.	17 dys.	3 years. V = 20-20.
72	73	F.	Fair.	Senile. O. D.	Normal.	Graefe upwards. Very tedious recovery from bronchitis.	21 dys.	21 days. V = 15-30. Jager 5.
73	60	F.	Fair.	Senile. Over-ripe. O. D.	Normal.	Graefe upwards. Patient weak and with cough, but improved.	17 dys.	2 months. V = 20-64. Jager 3.
74	60	M.	Good.	Senile. 1 yr. O. D.	Normal.	Graefe upwards. Normal.	14 dys.	1 month. V = 20-30. Jager 1.

Congenital Cataracts.

75	50	M.	Good.	Congenital. O. S. Lately increased, and cretac. spots on capsule.	Normal.	Graefe upwards. Small cut. Sticky lens removed with forceps and curette. Normal.	18 dys.	18 days. Snellen 1 1-2. V = 20-50.
76	9	M.	Good.	Congenital, lenticular and capsular.	Good.	Discission twice. O. D.	16 dys.	Patient not seen, to record vision.
77	9	M.	Good.	O. D. O. S.	Good.	" once. O. S.	7 dys.	
78	24	F.	Good.	Congenital. Cannot fix.	Fair.	O. D. Iridectomy. Six months later, linear incision and forceps used. Some vitreous.	22 dys.	22 dys. V = Jäger 14. Fingers at 7'.
79	24	F.	Good.	Ditto.	Fair.	O. S. Iridectomy. Five months later, linear incision, and, with forceps, capsule and cretaceous material removed. Both pupils clear, and ophthalmoscope shows very irregular papillæ.	18 dys.	Counts fingers. Goes about.
80	10	F.	Good.	Congenital, central.	Fair.	O. D. Punctured four times. Subsequent iridectomy and extraction with forceps six years after, mother refusing before.	28 dys.	5 months. V = 20-50. Snellen 1.
81	10	F.	Good.	Spreading. Ditto.	Fair.	O. S. Punctured four times, and, six years after, also iridectomy and removal of capsule and cretaceous mass by forceps.	21 dys.	5 months. V = 20-40. Snellen 1.
82	7	F.	Good.	Congenital.	Good.	O. D. Discission. Again in five months. Again in six months, and will need future extraction of capsule.	11 dys.	Not yet taken.
83	7	F.	Good.			O. S. Ditto. Ditto. Ditto.	11 dys.	
84	39	M.	Fair.	Congenital. Post. pol.	Normal.	O. S. With Graefe's knife iridectomy upwards. Lens and capsule removed with scoop and forceps. Third day, traumatic iritis. Finally subsided, and patient allowed to go home to return for further operation.	29 dys.	Count fingers now.
85	18	M.	Good.	Congenital.	Normal.	O. D. Iridectomy downwards. Patient very violent after ether.	11 dys.	4 yrs. V = 20-100. J. 2.
86	18	M.	Good.	Ditto.	Normal.	O. S. Ditto. Ditto. Ditto .	11 dys.	Ditto. Hm. = 1-30.
87	33	F.	Good.	Congenital.		O. D. Graefe's operation, small, upwards. Whole mass removed with forceps. Patient had been operated on other eye, and could, with it, just see to go about.	10 dys.	30 days. J. 16 and V =1-10.
88	14	M.	Good.	Cong.; doubt.	Good.	O. D. Discission.	4 dys.	6 mos. V=20-50. Sn. 3.

Reports of One Hundred and Five Cases of Operation For Cataract. (Continued.)

No.	Age.	Sex.	General Health.	Quality and Duration of Cataract.	Functional Examination.	Method of Operating. Incidents. Anæsthesia. Remarks. After treatment.	Duration of Treatment.	Resulting vision nd date of Record.
89	19	F.	Good.	Congenital.	Good.	O. S. Discission. Repeated five months later. After second operation, a piece of lens laid against iris, and caused nausea and vomiting for some days.		1 year. Vision noted. Still improving.
90	25	F.	Fair.	Congenital, large central.	Fair.	O. S. Iridectomy and capsule opened. Cortical left for fear of vitreous.	16 dys.	6 mos. V=20-100. J. 6.
91	25	F.	Fair.	Ditto.	Fair.	O. D. Small Graefe upwwrds. Pupil cleared with forceps.	14 dys.	10 mos. V=20-100. J. 6.
92	51	M.	Good.	Congenital, central and	Good.	O. D. Iridectomy downwards. Patient writes, "he is much satisfied and reads all day." The gradual closure of the pupils with age rendered iridectomy necessary.	12 dys.	Jager 14. 12 days.
93	51	M.	Good.	slight opacity outs. nucleus.	Good.	O. S. Ditto. Ditto. Ditto.	12 dys.	Jager 1.
94	12	F.	Good.	Congenital, both O. D. Small central. O. S. complete.	Good.	O. S. Small Graefe upwards, and forceps used for capsule. Pupil cleared and papilla seen; not natural.	14 dys.	Vision greatly improved.
95	9 m.	F.	Fair.	Congenital	Fair.	O. D. Discission twice, and, afterwards, hook with broad needle. Capsule tough. Cornea thin. Operations very difficult. No irritation.		Fundus O. D. seen.
96	9 m.	F.	Fair.	and nystagmus.		O. S. Discission twice, and hook the same as O. D.		O. S. not so well.

Soft Cataract in Adult.

97	21	F.	Poor.	Soft. O. S. O.D. 2-3 stump from some previous operation.	Good.	O. S. Linear incision and iridectomy. Capsule pulled and broken with cystitome. Little vitreous. Case did well.	13 dys.	1 month. V = 10-30. Snellen 3 1-2.

Traumatic Cataract.

98	29	M.	Good.	Traumatic. O. S.	Good.	O. S. Iridectomy upwards, and cataract removed with curette. Capsule to be broken through	17 dys.	17 days. V = 10-20.
99	57	M.	Good.	Traumatic? Glaucoma.	Normal.	Small Graefe upwards. Done to relieve great pain. Cataract soft, but good-sized nucleus. Iritis fifth night, from an accidental blow. Persistent, but yielded to treatment.	23 dys.	4 months. V = 20-80. Snellen 1 1-2.

100	18	M.	Good.	Traumatic posterior synechia.	Good.	O. S. With a large knife an iridectomy made, including the posterior synechia; through this, with forceps and curette, lens evacuated. Taken sick with lung trouble and sent to Mass. General Hospital.	11 dys.	Patient saw small objects, and will have good vision.
101	14	M.	Good.	Traumatic. Piece of cap.	Good.	O. S. For pain, broken lens removed by lance-knife. Capsule fastened in corneal wound. No history till after operation. Patient did well, and saw fingers in one month. Afterwards returned with pain, and eye removed with piece of cap in it.		One month, counts fingers. Globe removed afterwards.
102	42	M.	Good.	Traumatic.	Fair.	O. S. Iridectomy downwards and outwards, and lens evacuated. Considerable cortical left. There were anterior and posterior synechiæ.	5 dys.	Five days. Sees stone in finger-ring.
103	14	M.	Good.	Traumatic. 2 years. O.D.	Good.	Small Graefe upwards. O. D. Small Graefe upwards. Vitreous fluid, and flowed at once.	14 dys.	14 days. V = 20-50. Smallen 1 and 1-2.
104	25	M.	Good.	Traumatic. 2 years.	Good.	Through this, capsule and sticky lens removed. Did well till fifth day. Patient struck eye in sleep. Bleeding, iritis, &c., but finally did very well.	19 dys.	2 1-2 months. Vision = 20-40.
105	27	M.	Good.	Traumatic. 2 years.	Good.	O. S. Small Graefe upwards. Enlarged. Lens substance absorbing at end of twenty-five days.	25 dys.	Record says good vision.

MALIGNANT PUSTULE.—Dr. MAX. Bartels reports a case (*Langenbeck's Archiv*, 16 Bd. 2 Heft). of this affection occurring in a girl 14 years of age, the pustule being seated upon the right shoulder. The treatment consisted of free incisions and applications of fuming nitric acid. The patient made a good recovery. She stated that three similar cases had occurred within a fortnight among her acquaintances, in all of whom the pustules appeared upon the face. With one exception, all these persons were employed in picking horsehair, great quantities of which they were obliged to have about their house. Recently, this hair was noticed to be more dusty than usual. The brother of the patient, who had also contracted the disease, had not worked upon the hair, but had, nevertheless, spent a good deal of time in the room where the hair was being picked.

[When malignant pustule has prevailed in the hair factory at Walpole, in this State, it has been noticed in several instances that the hair was at that time matted together with crusts, scales and other morbid substances, that had apparently proceeded from diseased animals. —REPORTER.]

FATAL HÆMORRHAGE FROM THE EAR.—At a recent meeting of the Buda-Pest Surgical Society, Dr. Böke related the particulars of two fatal cases of hæmorrhage from the ears, and took occasion to oppose the tying of the carotid artery, when in such cases the hæmorrhage is the result of caries.

The first case was that of a sailor, 22 years old, who died after experiencing for fourteen days severe hæmorrhage, accompanied by vomiting. The autopsy revealed extensive necrosis with loss of substance in the *tegumentum tympani*, the anterior and posterior wall of the *tympanum* and also of the *canalis facialis*. The source of the hæmorrhage was found to be the *bulbus venæ jugularis*.

In the second instance, that of a sailor, aged 43, there was found, at the autopsy, caries of the *tegumentum tympani* and a communication between the *sinus petrosus inferior* and the cavity of the tympanum.—*Centralblatt für Chirurgie*, Sept. 19, 1874.

Progress in Medicine.

REPORT ON DISEASES OF THE CHEST.

By F. I. Knight, M.D.

(Concluded from page 324.)

Inhalation of Compressed and Rarefied Air. Transportable Pneumatic Apparatus of Waldenburg.

Since the communication of M. Tabarie to the *Académie des Sciences* on this subject, in 1832, compressed air has been used to a limited extent in the treatment of affections of the respiratory organs.

Tabarie's apparatus consisted of a wrought-iron, spherical chamber, capable of accommodating from one to a dozen patients; air, under a pressure of from one-half to two-thirds atmosphere, was forced into the chamber by a pump worked by steam. An arrangement attached to the apparatus afforded egress to the air expired by the patients. Each sitting lasted two hours, the requisite pressure was produced gradually during the first half hour, and after being continued for an hour, was gradually withdrawn during the last half hour (Cohen). Gustav Lange improved and simplified this apparatus, making it cylindrical in form, and so arranged that rarefied, as well as compressed air could be used (Waldenburg). Hanke (1870), in Vienna, employed compressed and rarefied air locally in the treatment of affections of the respiratory organs. In Hanke's apparatus, be it understood, only the respiratory organs, and not the whole body (as in the cabinet), were subjected to the change in the presence of the air.

Waldenburg has recently attracted considerable attention to this method of treatment by inventing a more suitable apparatus, and by publishing some excellent results of treatment. (*Berliner Klinische Wochenscrift*, nos. 39, 40, 46 and 47, 1873.)

In the *British Medical Journal* (April 11, 1874), Waldenburg himself gives a *resumé* of the subject. He says that pneumatometry has shown how important it is to study inspiration and expiration separately. It appears that in one class of diseases the inspiratory power may be intact, or even increased, while expiration alone is interfered with. This condition is seen, principally, in emphysema. In another class, as phthisis in the first stage, only the inspiratory power is diminished, while the expiration is quite or nearly normal. The idea naturally suggests itself that it could be of importance for therapeutics to operate upon inspiration and expiration separately. Waldenburg at first tried Hanke's apparatus, which is dependent on a pump arrangement, but found it insufficient, as it worked with a very limited and continually varying power. He therefore constructed another apparatus, which consists of two cylinders, each 39 inches high, the inner one being 10½ inches in diameter, the outer one 11.8 inches. The inner cylinder is closed at the top, and cords fastened to the top of it pass over wheels attached to a frame-work above. The apparatus is filled with water to the height of about 7·8 inches. Weights being attached to the ends of the cords draw up the cylinder, and thus rarefy the air in it. The pressure of the atmosphere upon the cylinder amounts to about 1,300 English pounds. According to the weight attached, the

air is rarefied in a ratio which may be exactly calculated; the weight of the inner cylinder, which amounts to about ten pounds, being allowed. When, for instance, thirty pounds are attached, this gives a net weight of twenty pounds, which corresponds to about one-sixtieth of the atmospheric pressure (12 millimetres on the mercurial guage attached to the apparatus). From the inner cylinder, a tube proceeds to a mask, which may be firmly adjusted upon the face, and which is provided with a cock in such a manner that either the air in the cylinder is shut off, and communication only with the outside air exists, or, *vice versâ*, the connection with the latter is broken, and the mask communicates only with the air of the cylinder. If the cock be opened while the weights are attached, the cylinder sucks air in with a constant force (in the above example, one-sixtieth of atmospheric pressure), and rises. If the mask be now firmly held before the nose and mouth, and an expiration made while the cock is open, the air is drawn out of the lungs with constant force, and expiration assisted. We may also inspire, if we choose, rarefied air. Should it be desired, on the contrary, to employ compressed air, the cylinder is first raised by attaching weights; these are then taken off, and weights laid upon the cylinder. If, for example, ten pounds be laid on, we work with a power of twenty pounds (= one-sixtieth of an atmosphere) and, again, the mercurial guage shows a pressure of twelve millimetres, but in the opposite direction. The cock being opened, the condensed air streams out under constant pressure, and may be employed for inspiration. Waldenburg has investigated the effects of condensed and rarefied air on healthy and diseased persons, and arrived at very important results, which follow with almost the certainty of a physical experiment. The power which he usually employs, both for rarefication and condensation, amounts, generally, to one-sixtieth to one-fortieth of an atmosphere (20 to 30 lbs.); in exceptional cases, he has gone as high as one-twentieth of an atmosphere. For *inspiration* of rarefied air, however, he employs a much smaller force, usually one-three-hundredth to one-hundredth of an atmosphere.

A. Effects upon respiration. 1. By inspiration of condensed, and by expiration into rarefied air, the ventilation of the lungs is for the time being increased. Persons, for instance, with a vital capacity of the lungs of 4,000 cubic centimetres, inspire or expire several hundred cubic centimetres, or even 1,000 to 2,000 centimetres more than their vital capacity amounts to. The thorax is, therefore, by the inspiration of condensed air, more widely expanded than is otherwise possible by the deepest inspiration; on the other hand, by expiration into rarefied air, the lungs contract more than is otherwise the case in forced expiration; or, in other words, by expiration into rarefied air, a part of the residuary air is drawn mechanically from the lungs. 2. By continued employment, both of inspiration of compressed and expiration into rarefied air, the vital capacity of the lungs is gradually considerably increased. In several cases of emphysema, Waldenburg has seen the vital capacity within a few weeks increase by more than 1,000 cubic *centimetres;* in the case of one gentleman, it rose within fourteen days from 2,800 to 4,000 cubic *centimetres*. In accordance with this, it could be proved by percussion that the previously abnormally expanded lung gradually contracted and returned to its normal limits. 3. By means of the pneumatometer, we may show with cer-

tainty that the power of inspiration, as well as the pressure of expiration, increases by the use of the pneumatic apparatus, and often very considerably so. For instance, a person suffering from emphysema had, when he came under treatment, an inspiratory power of 130 *millimetres*, and exerted by expiration a pressure of 100 *millimetres*; within fourteen days, the former increased to 150 *millimetres*, the latter to 140 *millimetres*. In the case of a phthisical patient, with inspiration of 60 millimetres, and expiration of 90 millimetres, both increased within six days to 110 millimetres.

From these results, the indications for treatment become self-evident. Expiration into rarefied air is chiefly used for emphysema of the lungs; and retraction of the expanded lungs, which may be shown by percussion to have taken place, is with certainty to be accomplished. Anatomical lesions cannot, of course, be done away with. Inspiration of compressed air is indicated where it is desired to enlarge the thorax and expand the lungs, especially as a prophylactic against phthisis in the first stage of consumption, in conditions consequent upon pleurisy, in pleuritic effusions after tapping, for inducing artificial respiration, &c.

B. Effects upon the heart and circulation. Physiology teaches us that the mechanism of respiration has an essential influence upon that of circulation. The lungs enclosed air-tight in the thorax, exert a negative pressure upon the heart and the great vessels, and this is greatest during inspiration; the blood is, as it were, sucked out of the veins, and pressure in the aortic system is diminished, as seen in the kymographion. Two well-known, physiological experiments (Johannes Muller, Ed. Weber, Donders) prove that by changing the pressure in the lungs, the heart's action may be powerfully influenced, so much so as to cause apparent death. In the first place, by means of as deep and as long-retained inspiration as possible, with the mouth and nose closed, the pulse may be made completely to disappear. Secondly, by forcibly expelling air, after a deep inspiration, with the glottis closed, circulation may be likewise impeded, and even brought to a stand-still. In the first experiment, the negative pressure of the lungs is largely increased, and thereby the power of the heart so diminished that it can no longer act; in the second experiment, the negative pressure is changed into a considerable positive pressure, and thereby the flow of blood from the veins into the heart is completely checked. The pneumatic apparatus enables us to make use of the mechanical effects of the increased and diminished pressure upon the heart and vessels for therapeutical purposes, and the power to be applied may be exactly regulated according to weights or mercurial pressure. Waldenburg has obtained the following results with it:—

1. Inspiration of compressed air. By this the pressure in the lung is increased; it becomes less negative; or, with a sufficient degree of compression, is converted into a positive pressure. The necessary consequences of this are the following:—*a*. The pressure in the aortic system is raised; the pulse becomes more resistant, and even hard. *b*. The flow of the blood from the heart into the aorta is increased; the pulse becomes fuller and larger. *c*. The flow of the blood from the veins into the right side of the heart is checked; the jugular veins are plainly seen to become turgid. Inasmuch as more blood streams into the aortic system, and less flows from the veins, there arises an

increased fulness of blood in the greater circulation, while the heart and lungs are disburdened of the blood. Expiration into compressed air works in a like manner, only more energetically; this is, however, on account of the disturbance of respiration, less capable of being therapeutically utilized.

2. Inspiration of rarefied air. The effect of this is quite the reverse; the pressure of the lungs becomes still more strongly negative, with these results. *a.* The pressure in the aortic system is diminished; the pulse loses in tension, and becomes soft. *b.* Less blood flows out of the heart into the aorta; the pulse becomes smaller and less full. *c.* The diminished pressure connected with a widely-expanded thorax draws the blood more forcibly from the veins into the right side of the heart; the jugular veins collapse visibly. *d.* Inasmuch as less blood flows from the left side of the heart, and more blood is drawn into the right, there follows an increased fulness of blood in the chest, and a diminished fulness in other parts of the body.

Similar, only less energetic, is the effect of expiration into rarefied air. The indications, according to these physiological premises, are clear. The inspiration of compressed air is indicated where the flow of blood from the lungs and left side of the heart is impeded, especially in insufficiency or stenosis of the mitral and of the aortic valves. In several cases of insufficiency of the mitral valve, with alarming symptoms, Waldenburg has obtained the most brilliant results from the application of compressed air. Furthermore, compressed air is indicated in chronic inflammatory processes of the lungs, as in phthisis, in bronchial catarrh, and in chronic hæmoptysis. Compressed air works in all these cases like a venesection which is confined to the organs of the chest.

Inspiration of rarefied air is, on the contrary, indicated where there exists an impediment to the flow of blood in the veins, especially in stenosis, or insufficiency in the valves of the right side of the heart. It is further to be employed to bring about a greater fulness of blood in the lungs, especially as a prophylactic means in persons with a consumptive tendency, where, at the same time, it serves also as the best gymnastic exercise for strengthening the muscles of the thorax. This agrees with the theory advanced by Waldenburg and others (see his work on Tuberculosis, &c.) concerning the etiology of phthisis, according to which the insufficient fulness of blood in the lungs disposes to cheesification. In these cases, however, from the grounds at first alluded to, inspiration of compressed air should be combined with it. The contra-indications are also suggested by the physiological premises. Rarefied air should not be used in hæmoptysis or disposition thereto, nor in erethitic inflammation of the lungs. Compressed air is contraindicated in abnormally increased pressure in the aortic system; in congestion of the brain, where the coats of the vessels are not intact, giving rise to the apprehension of ruptures, and especially in the so-called apoplectic habit.

Various modifications of Waldenburg's apparatus have been proposed by Cube, Störck and Biedert, of which Störck's is absurd, the others of doubtful utility.

Sommerbrodt confirms the remarkable success of Waldenburg in the treatment of bronchial catarrh by this means.

Boston Medical and Surgical Journal.

Boston: Thursday, October 8, 1874.

It is not yet twelve months since the death of the unfortunate Mrs. Crie, who asked for ether, but was killed by chloroform, administered by Dr. Eastham, but we have already another victim sacrificed to this same idol. Charles Linscott, a strong and healthy brakeman, entered the office of Dr. O. P. Rice on September 26th, to have a tooth extracted. After some fruitless attempts, the dentist administered chloroform. A witness, who was present a part of the time, said that the deceased asked for ether; Dr. Rice said that he consented to chloroform. There not being enough of the anæsthetic, more was sent for, under which the patient died in the usual way. Dr. Rice rubbed the dying man's face and hands with ammonia, put a little morphia on the tongue, and made some apparently inefficient, certainly ineffectual, attempts at resuscitation. Coroner Ainsworth was called, and ordered an autopsy and an inquest; from the testimony given at which, we have condensed the above account of the death. The autopsy was made by Dr. A. B. Hall. The membranes of the brain were very much congested, as were also the lungs. There were pretty extensive adhesions from an old pleurisy on the right side. The heart was healthy. The abdominal viscera were rather darker than usual, but otherwise normal. The blood was dark and fluid in all parts of the body. Most of the organs emitted an odor similar to that of a cloth on which chloroform had been used an hour or two previously. Drs. George H. Gay, R. M. Hodges and Norton Folsom gave the oft-repeated testimony to the danger of chloroform, and to the safety of ether. The jury found that the chloroform was the cause of death, declared its use to be unjustifiable, and recommended a law to prohibit it

Here is the same sad story, which has been told so often, again repeated. A healthy man wishes to have a trifling operation painlessly performed; the practitioner wantonly, sometimes in disregard of the request of his patient, uses a dangerous anæsthetic when he might use a safe one, and sends the victim to his account, leaving, often, a family without support. The practitioner knows that this accident has happened to many, and may happen to any one, and that no skill in administration or resuscitation is sure to avert the fatal result; but he has already fifty, one hundred or a thousand times recklessly endangered the lives entrusted to him without accident, so, confident in his impunity, and exclaiming with the ungodly, "tush! none of these things shall happen to me!" he takes the risk once too often. We

hold that, in the light of morality, this conduct is criminal, and we hope that the coming Legislature will make it so in the eye of the law.

One of the most common sources of astonishment to the educated foreigner visiting this country, of mortification to the profession and of injury to the community, is the extensive and often indecent advertisement of quack medicines, which have received a quasi endorsement by the government in the form of a patent. Patents were originally intended to secure to the inventor who, by industry and genius, had made some useful discovery, a proper reward for his services to humanity, by forbidding others to borrow the fruits of his labors without making him some return, and so far the system is just and worthy. The use, however, which has been made of it in favor of medicinal nostrums can not certainly have been anticipated by its originators. They can never have intended that this plan should have been extended so as to include the liberal professions; that the physician should not be at liberty to prescribe to a man in pain any given combination of drugs without paying a bonus to the one that first combined them; nor, on the other hand, to confer a kind of respectability on useless and, for the most part, injurious compositions. The harm done to the community is beyond computation, and, sad to say, is by no means confined to the lowest classes, but pervades the whole of society. An eminent practitioner once remarked to us that the tendency to quackery is as natural as that to sin, and, this being the case, it is evident that our best course is as much as possible to remove the temptation.

The variety of temptation, in other words the number of advertised and patented medicines, is incredible; and even if it were true that each one were good for some particular form of disease they must do great harm, none the less, as they are advertised as useful for every kind of complaint. One inventor declares that "even if a person ain't sick, taking this remedy will make him feel good;" but does not inform us if benefit comes from a spiritual or a spirituous ingredient. We know for a fact that several of these nostrums convey great satisfaction to the strict teetotalers of New England. Another benefactor promises relief to the lower animals, as well as to man; "my remedy will cure bots in horses, and rheumatism, sprains, chills, yellow fever and smallpox in man." In point of fact, few of these mixtures are of any special value for anything, and many are even dangerous; and, what is much to the point here, few have really the element of novelty which entitles them, viewed as mechanical compositions, to a patent.

We are deeply gratified to learn that there is at last hope of a reform. Dr. Robert G. Dyrenfurth, the new Principal Examiner in the department of chemistry, has lately refused a patent to one of these

mixtures. After some references to show that it is already well known, his argument runs as follows:—

"But beyond mere questions of novelty, I wish to call attention to the following reasons why protection should not be given to so-called inventions of this and a kindred nature.

"Such patents have, it is true, been granted, but it is not too late to stop. 1. (Having reference to this particular case and others where mixtures are called compounds.)

"Each one of a number of ingredients being used alone to attain the result which it is said a mixture of all will produce; or even separate ingredients being put into mixture to perform separate functions, or meet separate indications within the human body, a mere mechanical assemblage of such ingredients, there being no chemical union, is not a novel and patentable *compound*.

"2. There is no invention in mixing a number of drugs, all of which have been used alone to produce the result wrought.

"It may be claimed that invention is unnecessary in a composition of matter, that the spirit of the law does not require it, that inasmuch as Section 24 provides that any person who has invented or *discovered* any new and useful art, machine, manufacture or composition of matter, may, under certain conditions, obtain a patent therefor, the term *discovery* applies to compositions, *invention* to the rest. Yet, even if this be the case, and while the difference between *invention* and *discovery* may be that, under the former, a new thing is created, under the latter something already existing is found, which produces novel and unexpected effects in a line not analogous to anything to which the thing has been applied before (even if this be the case, I say), applicant has done nothing to entitle him to a patent, for he has not even made a discovery. His ingredients but perform their well-known functions. Generally, however, the term 'discovered' has no force, except when its meaning is synonymous with that of invented.

"3. To write a prescription is again not invention, nor yet a patentable discovery, but rather a matter of skill.

"The tyro in medicine is taught the effects of the various remedies, and is told that he may mix or combine certain of them. He is taught, furthermore, how, under the various complications of disease, a number of drugs may be simultaneously indicated and administered. A complication, or even a single symptom arising where the skill of the physician would point out to him that a number of drugs were necessary, his prescribing these, mixing them in *any* required proportion and exhibiting them, would be ascribable to such *skill*, but would not be *invention*.

"4. The granting of patents upon the various prescriptions is pernicious, *first*, because the same nostrum cannot be taken with benefit by all persons, even for the same disease, i. e., the one disease (they are usually sold to cure a score, the absurdity of which ought to be apparent to every one) difference in diathesis requiring different remedies; such patents thus generally inure to the benefit of one (the patentee), and the misery of many; and, secondly, for the following reason: A certain mixture of well-known drugs being indicated, the *already existing knowledge* (his schooling) of the physician of such fact should not be trammeled by the further fact that some enterprising individual had already taken to himself a monopoly (that is a grant

which restrains others from the exercise of a right or privilege which they had before the grant was made) of just this mixture, in contravention of public policy and the welfare of man.

"5. And, finally, if this or any other prescription be an invention, then the thousands of physicians throughout the world must make thousands of patentable inventions every day, an *invention* being thus, in fact, unfolded to mankind every time an original prescription is written by a competent leech. ROBERT G. DYRENFURTH,

Principal Examiner U. S. Patent Office."

The law is lax, and we fear that this decision may not be supported; but in any case, Dr. Dyrenfurth deserves the gratitude of the whole country. He has done his part, it is now for the profession to use all possible influence to obtain a new and a better patent law, which shall recognize no so-called medical discoveries.

MEDICAL BOARD OF BELLEVUE HOSPITAL.—The following is the Medical Board of Bellevue Hospital as constituted by recent resolutions of the Commissioners of Public Charities and Correction.

Consulting Physicians and Surgeons.—John T. Metcalfe, B. W. McReady, William H. Van Buren, Isaac E. Taylor, Fordyce Barker, Lewis A. Sayre, Alexander B. Mott and John J. Crane.

Visiting Physicians and Surgeons.—Austin Flint, Sr., James R. Wood, Alonzo Clark, Henry B. Sands, Alfred L. Loomis, Stephen Smith, Wm. B. Eager, Ernst Krackowizer, Edward G. Janeway, Frank H. Hamilton, Francis Delafield, Thomas M. Markoe, William H. Thompson, Erskine Mason, Gouverneur M. Smith and John W. S. Gouley.

Correspondence.

MESSRS. EDITORS,—The gentleman who reviewed the Transactions of the North Carolina Medical Society in your JOURNAL of Sept. 17th, either did not read my paper on Puerperal Eclampsia carefully, or misrepresented it intentionally. Either view of the case, you will readily perceive, is not especially creditable to a reviewer; but I am charitable enough to suppose that he read my article hastily and carelessly, and then reviewed it without any intention of doing me an injury. He says, "whatever the underlying condition be, he (Dr. Payne) would bleed with a boldness perfectly terrifying to those who believe 'the lancet a relic of barbarism.'" The gentleman has no authority from anything stated in my paper for saying "whatever the underlying condition be, he would bleed," because, on the contrary, it is distinctly stated "that I am decidedly in favor of blood-letting as a mechanical means of relief, not only in the *apoplectic*, but also in *many cases* of the uræmic forms of puerperal eclampsia, and no mention whatever is made of bleeding in those cases which are caused by cerebro-spinal reflex irritation of uterine origin. I very freely admit that I may "bleed with a boldness perfectly terrifying to those who believe the lancet a relic of barbarism," since the mere sight of a few small drops of blood is quite sufficient to cause their cheeks to blanch, their frames to tremble, and their knees to shake, and who, "while they dare not strike for fear, would make it virtue in them to forbear."

My reviewer says, "in one case, seventy ounces were taken *pleno rivo*, and the patient 'recovered well.'" This is a perversion, not only of my meaning, but of the facts as stated. My language is plain! "He had bled her before my arrival some forty or fifty ounces. I sustained the doctor fully in his treatment, and we made a *larger opening in the vein*, from which we abstracted *twenty ounces more of blood, pleno rivo.*"

Again, he says, "as concomitant treatment, Dr. Payne gives opium and morphia in full doses." This is true so far as it goes, but it does not do me full justice.

These are my words: "Now I will not pretend to deny the efficacy of chloroform, chloral hydrate, ether, bromide of potassium, veratrum viride, and the preparations of opium in this disease, because I know their potency; but, while they may accomplish all the good ends claimed for them, still, instead of resorting to either of them alone, I prefer to *combine their use* with that of *venesection* in the *greater majority* of cases." I speak of active purgation, also, and one of the cases reported was treated with *chloroform and morphia alone.* My reviewer further remarks: "Not only is bleeding practised thus to control convulsions, but when, during pregnancy, any premonitory signs of uræmia present themselves, the lancet is also resorted to, and it is regarded 'as a significant fact that not one of these cases, during a practice of nearly twenty years, has ever had a puerperal convulsion.'" Here is another distortion. The following words are mine: "And not only do I believe all this, but I feel assured that blood-letting is a most potent remedy for good as a prophylactic in threatened convulsions. It has generally been the custom for those of my patients who expect to be confined, to put themselves under my care some time before confinement, and whenever they have complained of "vertigo, dimness of vision, ringing in the ears, sudden flushings of the face, a sense of fulness of the head, and a tendency to somnolency at any time *during the latter part of gestation*, I have almost invariably bled them *(en passant* I do not regard the above symptoms as absolutely pathognomonic of uræmia). But when patients with such symptoms have presented themselves I have *most frequently bled them;* and I regard it as a significant fact, that not one of those who have thus come under my care during a practice of nearly twenty years, have ever had a puerperal convulsion."

The doctor closes his notice of my article by observing, "Dr. Payne's method, although undoubtedly 'heroic,' would not, in all latitudes, be regarded as orthodox."

The gentleman does me more than justice here, because I do not think it can be considered "heroic" in me to follow the practice of the *very best* obstetricians now living, or who have lived in the years gone by; and I may be permitted to remark that I prefer what I believe to be truth, to what may be regarded orthodoxy in one latitude, and heterodoxy in another.

I have no doubt that Satan himself can give most plausible evidences of the soundness of his opinions, and I have no doubt that his opinions are regarded as orthodox in many latitudes outside of his own dominions. "A prophet is not without *honor* save in his own country." And I am sure that neither does my reviewer, nor do I, desire any better recognition of our opinions in any latitude simply that we may be regarded as *en haut ton.*

Yours, very truly, R. L. PAYNE.

Lexington, N. C., Sept. 27, 1874.

FRACTURE OF BOTH PATELLÆ FROM MUSCULAR ACTION.

MESSRS. EDITORS,—The following case illustrates an injury sufficiently rare to warrant its presentation in the JOURNAL.

Mrs. M., aged 38, is a well-developed, strong woman, weighing one hundred and seventy or eighty pounds.

Last May, while crossing from the curbstone to the street, by a misstep, she turned the foot obliquely, and, to save herself from falling, made violent muscular exertion, when "something gave away in both knees," and she sank to the pavement.

She was taken in a carriage to her home in Brighton, where, soon after, I saw her. Both patellæ were separated transversely, near the middle, the upper fragment lying two inches above its fellow. Ligamentous union supervened, with separation of the fragments from one-quarter to half an inch.

Truly yours, HENRY O. MARCY.

Cambridge, Oct. 1, 1874.

Medical Miscellany.

Dr. NELSON, of Danville, Ky., reports, in the *American Medical Weekly*, the case of a child with apparently three phalanges in each thumb. Prof. Leidy thinks the appearance due to excessive development of the trapezium.

DR. SIDNEY RINGER and Wm. Murrell report in the *Lancet* excellent results in the treatment of winter cough and bronchitic asthma by the inhalation of ipecacuanha.

ARTIFICIAL disease of the kidney in rabbits has been produced by Dr. Zielonko, of St. Petersburg, by tying a ligature round the aorta so as to cause a certain amount of stenosis.

PROF. MICHEL, of Nancy, has tied the interosseous artery of the arm for a bullet wound in the fore-arm, hæmorrhage continuing in spite of ligature of the brachial in its lower quarter, and of the ulnar and radial in their upper third.

THE most characteristic serial which comes under our notice is the *Nashville Journal of Medicine*, which, for a combination of highfalutin talk, dashed with a shade of rowdyism, is not to be surpassed.—*British Medical Journal.*

HUMAN AND ANIMAL VIRUS.—The discussion on the vaccination question at the Paris Academy of Medicine appears to have been almost as exciting as some at the National Assembly. It was finally decided that nothing had been shown to prove that heifer virus was inferior to human, and the government was advised to make re-vaccination obligatory.

ABNORMAL PHYSICAL DEVELOPMENTS.—At a recent meeting of the Medico-Chirurgical Society of Edinburgh, Dr. P. H. Watson alluded to the case of a young lady who was covered with a hirsute downy covering, or lanugo, to such an extent that she could not appear in society. Her relatives wanted something to be done for her, and sea-bathing was recommended; but soon after, when her menstruation began to be established, the extra hair covering entirely disappeared.

THE FAMILY BONAPARTE.—Madame Letitia Rattazzi, one of the members of the family Bonaparte, has for some months been visiting the principal towns of Europe, to study the ways and means of establishing a hospital which shall be especially devoted to the treatment of cancer. As is well known, several of the members of this family have succumbed to this terrible disease. The first deposit will be 150,000 francs, to which will be added a biennial prize of 5,000 francs for the best work on the subject, as well as a sum of 20,000 francs for him who shall describe the true cure for cancer.—*The London Medical Record.*

MATERNAL IMPRESSIONS.—There was an extended and very interesting discussion of this subject at the meeting of the British Medical Association. Mr. Clapperton, who read the paper, cited several curious cases, and thought that the phenomenon was not confined to human beings. Dr. Coyder, who had formerly been an unbeliever, stated that he changed his views after a remarkable case in his own practice. He amputated the finger of a man in the presence of his daughter, then one month pregnant. She was much impressed, and her child had the corresponding finger wanting. The general opinion of those taking part in the discussion appeared to be that these cases were more than coincidences, but some gentlemen dwelt on the fact that a great number of frights are received by pregnant women without any bad results, even when they dread them. Dr. Fothergill stated that his mother had feared that he would be born minus an arm, which, however, had not been the case.

PHYSICAL PECULIARITIES OF NEGROES.—Dr. A. W. McDowell publishes, in the *American Practitioner*, some observations on this subject which contain some facts that are new to us. The negro's want of power of resisting disease was abundantly shown in the late war. Dr. McDowell states that the fine chests frequently seen among the males are due solely to the great development of the pectoral muscles, and that the lungs are decidedly less in weight than those of white men. The liver, on the other hand, is larger. He goes on to say, "The negro's lower bowel was smaller. The colored troops were much troubled with constipation, often requiring purgatives, while at the same time and place the white troops had diarrhœa. The most marked difference existed between the spleen of the black and that of the white, the former only weighing half as much as the latter. 'Ague cake' was one of the sequelæ of malarial disease observed among the whites, but not among the blacks." In his army practice, the author weighed the brain at every *post mortem*, and found that its weight increased in direct ratio to the admixture of Caucasian blood.

DEATH OF DR. ANSTIE.—Death has claimed another victim from the foremost ranks of the profession in the person of Dr. Anstie, Physician to the Westminster Hospital, and well known by his writings on hygiene and therapeutics, and as editor of our excellent cotemporary, *The Practitioner*. Several cases of severe illnes having occurred in the School of the Royal Patriotic Fund, at Wandsworth, Dr. Anstie was called in to advise as to the causes and means of prevention, as well as to the treatment of the sufferers. With a disregard of principles which he would most strenuously have insisted upon in others, he spent several hours on Sunday, the 6th inst., in these investigations, exposed to sewer-gas, and resumed them on Tuesday, the 8th. In the evening of that day, he complained of being unwell, and, notwithstanding the unremitting attention of his friends, Dr. George Johnson and Dr. Burdon Sanderson, he died on Saturday of blood-poisoning, occasioned, primarily, from a puncture in the hand whilst engaged in a *post-mortem* on one of the pupils.—*Medical Press and Circular*.

THE SIMPSON MEMORIAL.—The result of a movement, set on foot shortly after the death of Sir James Y. Simpson, has been that nearly £6,000 has been subscribed for the purpose of founding a memorial in his honor. It has been determined to hand over £3,000 of that amount to the Maternity Hospital in Edinburgh, on condition that it shall be supplemented by an equal sum, to be applied towards the erection of a new building, with which the name of Simpson shall be associated, and that the remaining portion shall be applied to the erection of a statue of Sir James Simpson in some public place in Edinburgh.—*British Medical Journal*.

MORTALITY IN MASSACHUSETTS.—*Deaths in seventeen Cities and towns for the week ending September 26, 1874.*

Boston, 173; Worcester, 23; Lowell, 28; Milford, 4; Chelsea, 10; Cambridge, 22; Salem, 12; Lawrence, 22; Springfield, 11; Lynn, 17; Gloucester, 3; Fitchburgh, 9; Newburyport, 7; Fall River, 43; Haverhill, 5; Holyoke, 11; Pittsfield, 4. Total, 404.

Prevalent Diseases.—Cholera infantum, 79; consumption, 57; dysentery and diarrhœa, 29; typhoid fever, 20; pneumonia, 13; scarlet fever, 11; whooping cough, 11.

Fall River reports twenty-five deaths from accident.

CHAS. F. FOLSOM, M.D.
Secretary of the State Board of Health.

DEATHS IN BOSTON for the week ending Saturday, Oct. 3, 150. Males, 82; females, 68. Accident, 3; apoplexy, 6; asthma, 1; inflammation of the bowels, 3; bronchitis, 4; disease of the brain, 6; cancer, 3; cerebro-spinal meningitis, 2; cholera infantum, 22; consumption, 23; cyanosis, 1; debility, 9; diarrhœa, 14; dropsy, 1; dropsy of the brain, 2; drowned, 1; dysentery, 1; diphtheria, 2; erysipelas, 2; scarlet fever, 2; typhoid fever, 8; gastritis, 2; disease of the heart, 6; hernia, 1; intemperance, 2; jaundice, 1; locomotor ataxy, 1; inflammation of the lungs, 4; marasmus, 6; old age, 1; paralysis, 1; premature birth, 1; peritonitis, 1; puerperal disease, 1; disease of the spine, 1; teething, 1; tumor, 1; whooping cough, 2; unknown, 1.

Under 5 years of age, 79; between 5 and 20 years, 13; between 20 and 40 years, 26; between 40 and 60 years, 20; over 60 years, 12. Born in the United States, 119; Ireland, 20; other places, 11.